



# **The Commonwealth of Massachusetts**

## **The Human Resources Division**

### **Classification Specification**

#### **FORENSIC SCIENTIST SERIES**

##### **JOB TITLE & SUMMARY OF SERIES**

- **DISTINGUISHING CHARACTERISTICS**
- **KEY ACCOUNTABILITIES**
- **RELATIONSHIPS WITH OTHERS**
- **WORKING ENVIRONMENT**
- **PHYSICAL ABILITIES**
- **KNOWLEDGE, EDUCATION AND EXPERIENCE**

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## **FORENSIC SCIENTIST SERIES I-V:**

There are five levels of work in the Forensic Scientist series. Incumbents of classifications in this series perform analysis of crime-related chemical and biological evidence; certify the findings of crime-related evidence analyses; serve as experts in providing court testimony relative to analytical processes, procedures and outcomes; conduct organic, inorganic and quality-control laboratory and on-site tests; compile statistical data on laboratory tests; and issue reports based on scientific interpretation of data.

The basic purpose of this work is to collect, identify, classify and analyze all forms of evidence pertaining to criminal investigations, and to provide expert testimony on such processes and work product for criminal justice, law enforcement, legal and related purposes.

### **I. FORENSIC SCIENTIST I:**

#### **Distinguishing Characteristics:**

This is the entry level professional classification in this series. Incumbents apply basic principles, practices and techniques to the work performed. At this level, incumbents undergo training necessary to become fully competent forensic analysts in an area of forensic science specialization, seek guidance and advice from more experienced colleagues and focus on gaining the knowledge and experience to perform independently and participate in work of higher complexity.

#### **Supervision Received:**

Incumbents receive close supervision from employees of a higher grade who provide direction, training and instruction, work assignments and frequent reviews of performance through formal and informal verbal and written reports for effectiveness and conformance to laws, rules, regulations, policies and applicable laboratory protocols and accreditation standards.

#### **Supervision Exercised:**

None

#### **Functions Performed:**

Through a formal training program, incumbents:

- Complete comprehensive training in current methods and techniques used to conduct chemical and biological laboratory or on-site tests including, but not limited to, analyzing biological specimens and organic and inorganic substances; preparing solutions to be used in testing; and operating laboratory equipment.
- Develop proficiency in applying established protocols and procedures to determine the presence of alcohol, drugs, poisons, heavy metals, biological fluids (i.e. blood, semen, saliva, urine, and feces) as well as chemical and trace materials such as gunshot residues, hairs, fibers, paint and glass by examining clothes, weapons, sexual assault kits, and analyzing explosives/ignitable liquids to prepare reports on laboratory tests and to inform law enforcement and other authorized personnel of results.

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- Engage in practical application of learned methods and procedures for performing on-site scene processing to properly document, collect and transport evidence to the laboratory for further analysis and to analyze chemical and biological samples for the purpose of yielding probative results.
- Provide testimony as an expert and/or material witness in court and/or at formal judicial hearings in order to defend the findings of a test examination or analysis, provide opinions on test results/examinations, demonstrate scientific procedures, and to explain test procedures and other job-related functions.
- Follow formal instruction to provide technical advice and/or assistance by telephone, at on-site scenes or in laboratory settings to police and/or fire or legal personnel on immediate measures to be taken in obtaining and handling physical evidence. Confer with investigators regarding facts and suspicions pertaining to cases to determine the types of tests to be performed.
- Reinforce practices for maintaining the chain of custody for all evidence handled by adhering to laboratory protocols for requesting, receiving, packaging, returning and documenting contact with case-related items and materials.
- Calibrate laboratory equipment by following documented procedures and laboratory protocols for ensuring that equipment is functioning within the operating parameters set for achieving valid test results and analytical outcomes.
- Adhere to quality assurance measures and accreditation standards as mandated by all applicable rules, policies, protocols and procedures.
- Undergo periodic reviews to affirm that training benchmarks are being met and to satisfactorily complete all proficiency and competency tests required to successfully complete the training program.

Based on assignment, incumbents at this level may also:

- Conduct extraction of samples containing DNA and prepare reports including the interpretation of these extractions in order to inform law enforcement and other authorized personnel of results.

**Key Accountabilities:**

Through formal training incumbents at this level develop the decision-making authority to:

- Determine that reagents and solutions are suitable for use in testing and analytical processes per laboratory protocols and quality control standards.
- Determine that laboratory conditions are suitable for conducting tests and analytical processes per the laboratory quality assurance guidelines.
- Decide that appropriate scientific outcomes have been reached in order to submit test results and findings for review.
- Determine the operating condition of laboratory equipment to conclude if it meets or falls below applicable standards for use.

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- Determine if chain of custody protocols for handling evidence have been followed or violated in order to report violations to supervisory personnel.
- Conduct administrative review of casework.

**Relationships with Others:**

Key contacts and relationships for incumbents include laboratory personnel; professional instructors and trainers; and law enforcement, public safety, medical and legal personnel.

**Working Environment:**

While performing the duties of this classification, incumbents may work in an office environment, laboratory setting and/or at on-site scenes. While working indoors within an office setting, the noise level in the work environment is usually quiet. While working at an on-site scene and/or within a laboratory setting, the noise level is usually moderate but may be noisy. While working at an on-site scene and/or laboratory setting, incumbents may be exposed to dangerous situations. Incumbents may be exposed to bloodborne pathogens, communicable diseases, decomposed bodies, bodily fluids or spills, contaminated products or syringes and needles. Incumbents may also be exposed to poisonous or hazardous chemicals, pollution or foreign substances including pathogenic material both known and unknown, toxic fumes and explosive and flammable substances. Incumbents work under stressful conditions and are subject to a high level of emotional and physical stress. Incumbents may be required to work under extreme weather and environmental conditions. Incumbents may be required to travel and may be exposed to traffic and other roadway or travel-related hazards. Incumbents may be required to work extended hours, shifts, nights, weekends and/or holidays.

**Physical Abilities:**

While performing the duties of this classification in a typical office environment, incumbents are regularly required to sit for long periods of time, handle materials and talk and/or hear. Incumbents are occasionally required to stand and walk. While working at an on-site scene and/or laboratory setting, incumbents are regularly required to stand and walk for long periods of time, bend, handle materials and tools or equipment, and reach with hands and/or arms. Incumbents are occasionally required to sit, climb, balance, stoop, kneel, crouch or crawl. Incumbents must occasionally lift, carry, push or pull up to 50 pounds with or without assistance and with or without the use of devices and/or equipment used to assist in the lifting effort. Incumbents must be able to make precise arm-hand movements, make precise finger movements, maintain hand-arm steadiness and move individual fingers independently. Work assignments may be performed with or without reasonable accommodation to a known disability.

**Knowledge, Education and Experience:**

Applicants must have a Bachelor's degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics and (A) must successfully complete on-the-job training to attain full competence as a forensic analyst in a designated forensic science specialization within one year of the date of hire.

Incumbents are required to have a current and valid motor vehicle driver's license at a class level specific to assignment.

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**Incumbents are required to have the following at the time of hire:**

1. Knowledge of general laboratory techniques and methods, including sample collection and preservation, prevention of cross-contamination, proper methods used in the disposal of contaminated materials and laboratory safety.
2. Knowledge of the calibration and adjustment techniques applied to equipment used in a laboratory.
3. Knowledge of the properties and characteristics of various chemicals used in a laboratory.
4. Knowledge of the practices, techniques and tests conducted in a chemical laboratory.
5. Knowledge of sanitation and sterilization of equipment and devices and the methods, techniques and procedures followed in a chemical laboratory.
6. Knowledge of the terminology and standard abbreviations and the types and uses of equipment used in a forensic laboratory.
7. Ability to work independently and/or in a group setting and follow detailed instructions.
8. Ability to maintain accurate records and take detailed notes.
9. Ability to communicate effectively verbally and in writing.
10. Ability to analyze and determine the applicability of chemical test data, to draw conclusions and make appropriate recommendations.
11. Ability to work under strict time constraints and deal with severe emotional and/or physical stress.
12. Ability to read and interpret such documents as test results, technical manuals, forensic journals and government publications.
13. Ability to deal tactfully with others.
14. Ability to assemble items of information according to established procedures.
15. Ability to use a computer to conduct research, maintain databases and produce written documents.
16. Ability to multi-task and prioritize responsibilities.

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## II. **FORENSIC SCIENTIST II:**

### **Distinguishing Characteristics:**

This is the second level professional classification in this series. Incumbents apply basic principles, practices and techniques to the work performed. At this level, incumbents seek guidance and advice from more experienced colleagues, and focus on utilizing the knowledge, skills, abilities and experience acquired at entry-level to perform more independently and participate in work of higher complexity.

#### **Supervision Received:**

Incumbents receive close supervision from employees of a higher grade who provide direction, training and instruction, work assignments and frequent reviews of performance through formal and informal verbal and written reports for effectiveness and conformance to laws, rules, regulations, policies and applicable laboratory protocols and accreditation standards.

#### **Supervision Exercised:**

None

#### **Additional Functions Performed:**

In addition to the functions performed for the Forensic Scientist Level I, incumbents apply the knowledge, skills and abilities acquired at entry-level to perform the following:

- Conduct chemical and biological laboratory or on-site tests by analyzing biological specimens and organic and inorganic substances, by preparing solutions to be used in testing, and by operating laboratory equipment. Determine the presence of alcohol, drugs, poisons, heavy metals, biological fluids such as blood, semen, saliva, urine, and feces as well as chemical and trace materials such as gunshot residues, hairs, fibers, paint and glass by examining clothes, weapons, and sexual assault kits to prepare reports on laboratory tests, and to inform law enforcement and other authorized personnel of results. Contribute to validation of procedures, processes, materials and instruments used for evidence analysis and casework by participating in validation studies as directed.
- Perform on-site scene processing and/or collection of biological, chemical and material evidence to properly document, collect and transport evidence to the laboratory for further analysis, to analyze chemical and biological samples for the purpose of yielding probative results, and to provide testimony as an expert and/or material witness in court and/or at formal judicial hearings in order to defend the findings of a test examination or analysis, provide opinions on test results/examinations, demonstrate scientific procedures, and to explain test procedures and other job-related functions.
- Provide technical advice and/or assistance on-site or in laboratory settings to law enforcement, fire, medical and/or legal personnel on immediate measures to be taken in obtaining and handling physical evidence. Confer with investigators regarding facts and suspicions pertaining to cases to determine the types of tests to be performed.

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- Maintain the chain of custody for all evidence handled by adhering to laboratory protocols for requesting, receiving, packaging, returning and documenting contact with case-related items and materials.
- Conduct administrative and technical review of casework.
- Conduct seminars, lectures and demonstrations before civic and professional groups, medical, legal and law enforcement personnel and judicial institutions.

**Additional Key Accountabilities:**

In addition to the key accountabilities listed for the Forensic Scientist Level I, incumbents at this level have the decision-making authority to:

- Decide which found materials at an on-site scene constitute evidence and which evidentiary materials are acceptable for collection and analysis.
- Determine what case related information to convey to investigators and other police and personnel in preliminary written reports.
- Determine if submitted evidence complies with established rules, regulations and accepted standards.
- Decide which immediate measures need to be taken to obtain and handle physical evidence and determine the types of tests to perform on evidentiary materials.
- Decide what samples should be analyzed for a case or what samples need to be taken and/or collected at sites for proper testing and/or analysis and what priority should be given to the samples.

**Relationships with Others:**

Key contacts and relationships for incumbents include laboratory personnel; and law enforcement, public safety, medical and legal personnel.

**Working Environment:**

While performing the duties of this classification, incumbents may work in an office environment, laboratory setting and/or at on-site scenes. While working indoors within an office setting, the noise level in the work environment is usually quiet. While working at an on-site scene and/or within a laboratory setting, the noise level is usually moderate but may be noisy. While working at an on-site scene and/or laboratory setting, incumbents may be exposed to dangerous situations. Incumbents may be exposed to bloodborne pathogens, communicable diseases, decomposed bodies, bodily fluids or spills, contaminated products or syringes and needles. Incumbents may also be exposed to poisonous or hazardous chemicals, pollution or foreign substances including pathogenic material both known and unknown, toxic fumes and explosive and flammable substances. Incumbents work under stressful conditions and are subject to a high level of emotional and physical stress. Incumbents may be required to work under extreme weather and environmental conditions. Incumbents may be required to travel and may be exposed to traffic and other roadway or travel-related hazards. Incumbents may be required to work extended hours, shifts, nights, weekends and/or holidays.

**Physical Abilities:**

While performing the duties of this classification in a typical office environment, incumbents are regularly required to sit for long periods of time, handle materials and talk and/or hear. Incumbents are occasionally required to stand and walk. While working at an on-site scene and/or laboratory setting, incumbents are regularly required to stand and walk for long periods of time, bend, handle materials and tools or equipment, and reach with hands and/or arms. Incumbents are occasionally required to sit, climb, balance, stoop, kneel, crouch or crawl. Incumbents must occasionally lift, carry, push or pull up to 50 pounds with or without assistance and with or without the use of devices and/or equipment used to assist in the lifting effort. Incumbents must be able to make precise arm-hand movements, make precise finger movements, maintain hand-arm steadiness and move individual fingers independently. Work assignments may be performed with or without reasonable accommodation to a known disability.

**Knowledge, Education and Experience:**

An incumbent of the Forensic Scientist I classification may advance to the Forensic Scientist II level upon completion of one year of employment as a Forensic Scientist I within the laboratory, provided that the incumbent has successfully completed all formal, entry-level, on-the-job training requirements as determined by the Laboratory Director and has attained full competence as a forensic analyst in a designated forensic science specialization within one year of the date of hire as a Forensic Scientist I.

Applicants must have a Bachelor's degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics and (A) at least one year of full-time, or equivalent part-time, professional experience as a bench chemist or forensic scientist in a crime laboratory or comparable setting and (B) full competence as a forensic analyst within an accredited laboratory in a relevant forensic science specialization.

Incumbents are required to have a current and valid motor vehicle driver's license at a class level specific to assignment.

In addition to possessing the knowledge, skills, and abilities required for Forensic Scientist I, **incumbents are required to have the following at the time of hire:**

1. Knowledge of scientific methods and the theory and practice of chemical analysis.
2. Knowledge of the techniques for handling, preserving, tracking and transporting samples and specimens used in a laboratory to preserve the integrity of the samples for a presentation in a court of law.
3. Knowledge of scientific working groups and their recommendations.
4. Ability to collect evidence at on-site scenes in conformance with policies and procedures.
5. Ability to prepare documents and reports of analytical findings for laboratory, law enforcement, medical, and legal personnel.
6. Ability to compile statistical data for analysis and evaluation and to develop competence in the use of new computer applications and programs for discipline-specific data analysis.

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7. Ability to develop and deliver effective oral and written presentations,
8. Ability to examine and interpret evidence and to expedite assigned casework for review by higher level Forensic Scientists.
9. Ability to deliver credible and effective expert testimony for legal proceedings and to serve as an expert witness.
10. Ability to provide technical advice and direction to less experienced Forensic Scientists, law enforcement, fire, medical and/or legal personnel.

**Based on assignment, incumbents are required to have the following at the time of hire:**

1. Documented completion of education required for qualification to perform work in specific forensic analysis disciplines per the applicable accreditation standards.

**III. FORENSIC SCIENTIST III:**

**Distinguishing Characteristics:**

This is the fully competent professional classification in this series and, in some cases, may act as the first-level supervisory classification in this series. Incumbents apply advanced principles, practices and techniques to the work performed. At this level, incumbents seek guidance and advice from more experienced colleagues and focus on gaining knowledge and experience to perform more independently and participate in work of higher complexity.

**Supervision Received:**

Incumbents receive general supervision from employees of a higher grade who provide guidance and direction on agency policy and procedures, work assignments and facilitate performance reviews through formal and informal verbal and written reports for effectiveness and conformance to laws, rules, regulations, policies and applicable laboratory protocols and accreditation standards.

**Supervision Exercised:**

Incumbents may exercise direct supervision over, assign work to and review the performance of Forensic Scientist Level II and/or other employees of a lower grade.

Incumbents may provide functional direction to Forensic Scientist Level II and/or other employees of a lower grade through advice, guidance and delegation of tasks and participation in the training and mentoring of new employees.

Incumbents may participate in the interviewing process, make recommendations for new hires and participate in the training and mentoring of new employees.

**Additional Functions Performed:**

In addition to the functions performed for the Forensic Scientist Level I and II, incumbents at this level may perform the following:

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- Supervise Forensic Scientists of a lower level at on-site scenes as they identify, collect, preserve and evaluate physical evidence.
- Supervise Forensic Scientists of a lower level in work units to manage caseloads and assignment of cases to Forensic Scientists of a lower level, and in cross-disciplinary projects, processes, and functions where advanced subject matter knowledge is required to lead activities, provide training and direction, and oversee production of results and outcomes.
- Provide specialized training to Assistant District Attorneys, police and fire personnel on the collection and preservation of evidence and on laboratory operations.
- Perform validation studies for work groups or units.

**Additional Key Accountabilities:**

In addition to the key accountabilities listed for the Forensic Scientist Level II, incumbents at this level may have the decision-making authority to:

- Decide whether to accept or reject materials sent to the laboratory for testing.
- Decide how cases must be delegated and assigned to Forensic Scientists of a lower grade based upon caseload, staffing strengths and other personnel considerations.

**Relationships with Others:**

In addition to the key contacts listed for the Forensic Scientist Level II, key contacts and relationships for Forensic Scientist Level III incumbents include agency managers and supervisors and other clerical, technical and professional-level personnel; municipal, state and federal agencies; contractors and medical personnel; and the public.

**Working Environment:**

While performing the duties of this classification, incumbents may work in an office environment, laboratory setting and/or at on-site scenes. While working indoors within an office setting, the noise level in the work environment is usually quiet. While working at an on-site scene and/or within a laboratory setting, the noise level is usually moderate but may be noisy. While working at an on-site scene and/or laboratory setting, incumbents may be exposed to dangerous situations. Incumbents may be exposed to bloodborne pathogens, communicable diseases, decomposed bodies, bodily fluids or spills, contaminated products or syringes and needles. Incumbents may also be exposed to poisonous or hazardous chemicals, pollution or foreign substances including pathogenic material both known and unknown, toxic fumes and explosive and flammable substances. Incumbents work under stressful conditions and are subject to a high level of emotional and physical stress. Incumbents may be required to work under extreme weather and environmental conditions. Incumbents may be required to travel and may be exposed to traffic and other roadway or travel-related hazards. Incumbents may be required to work extended hours, shifts, nights, weekends and/or holidays.

**Physical Abilities:**

While performing the duties of this classification in a typical office environment, incumbents are regularly required to sit for long periods of time, handle materials and talk and/or hear. Incumbents are occasionally required to stand and walk. While working at an on-site scene and/or in a laboratory setting, incumbents are regularly required to stand and walk for long periods of time, bend, handle materials and tools or equipment, and reach with hands and/or arms. Incumbents are occasionally required to sit, climb, balance, stoop, kneel, crouch or crawl. Incumbents must occasionally lift, carry, push or pull up to 50 pounds with or without assistance and with or without the use of devices and/or equipment used to assist in the lifting effort. Incumbents must be able to make precise arm-hand movements, make precise finger movements, maintain hand-arm steadiness and move individual fingers independently. Work assignments may be performed with or without reasonable accommodation to a known disability.

**Knowledge, Education and Experience:**

Applicants must have a Bachelor's degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics and (A) at least three years of full-time, or equivalent part-time, professional experience as a bench chemist or forensic scientist in a crime laboratory or comparable setting and (B) full competence as a forensic analyst within an accredited laboratory in a relevant forensic science specialization, and documented experience in providing testimony as both an expert and material witness in legal proceedings, or (C) any equivalent combination of the required experience and the substitutions below.

**Substitutions:**

- I. A Master's or higher degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics may be substituted for a maximum of one year of the required (A) experience.

Incumbents are required to have a current and valid motor vehicle driver's license at a class level specific to assignment.

In addition to possessing the knowledge, skills and abilities required for Forensic Scientist II, **Incumbents are required to have the following at the time of hire:**

1. Knowledge of safety practices and procedures adopted in a forensic laboratory.
2. Knowledge of chemistry research methods and procedures.
3. Knowledge of legal terms and the legal process.
4. Knowledge of how to direct subordinates in the proper techniques for handling, preserving, tracking and transporting samples and specimens used in a laboratory to preserve the integrity of the samples for presentation in a court of law.
5. Ability to generate legal documents for use in the court system.
6. Ability to take information about a case and determine what needs to be tested.
7. Ability to give oral and written instructions in a precise and understandable manner.
8. Ability to supervise, including planning and assigning work according to the nature of

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the job to be accomplished, the capabilities of subordinates and available resources; controlling work through periodic reviews and/or evaluations; motivating subordinates to work effectively and efficiently; and determining the need for and either recommending or initiating disciplinary action.

9. Ability to gather information through questioning and observing individuals and by examining records and documents and determining the proper format and procedures for assembling the items of information.
10. Ability to evaluate the quality of collected chemical data and/or physical evidence.
11. Ability to interact effectively with and establish rapport with diverse teams and groups of people.
12. Ability to understand and apply Massachusetts General Law and federal statutes, rules, regulations, policies, procedures, specifications, standards and guidelines governing assigned unit activities.

**IV. FORENSIC SCIENTIST IV:**

**Distinguishing Characteristics:**

This is the seasoned professional classification, and in some instances, may be the first and/or second-level supervisory classification in this series. Incumbents exercise analysis, judgment and interpretation of data, laws and policies and perform advanced or specialized work, involving diverse or complex factors or situations, based on a thorough knowledge of the specialty area. At this level, incumbents perform work that requires considerable independence in the exercise of judgment, in determining approaches and in the interpretation and application of policies, laws, standards and procedures.

**Supervision Received:**

Incumbents receive general supervision from employees of a higher grade who provide guidance and direction on agency policy, work assignments and facilitate performance reviews through formal and informal verbal and written reports for effectiveness and conformance to laws, rules, regulations, policies and applicable laboratory protocols and accreditation standards.

**Supervision Exercised:**

Incumbents may exercise direct supervision over, assign work to and review the performance of Forensic Scientist Level I, II and III and/or other employees of a lower grade.

Incumbents may exercise indirect supervision over Forensic Scientist Levels I and II.

Incumbents may participate in the interviewing process and/or make recommendations for new hires and participate in the training and mentoring of new employees.

**Additional Functions Performed:**

In addition to the functions performed at the Forensic Scientist Level I, II and III, incumbents at this level may perform the following:

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- Oversee the activities of an assigned work unit and/or work groups to ensure the timely processing of casework, continuous improvement of work processes and procedures, and to troubleshoot operational practices for non-conformance to laws, rules, regulations, policies, procedures, established standards, and research-based best practices for evaluating evidence within a pertinent forensic science discipline.
- Under the direction of a manager or employee of higher grade, conduct investigations of quality control within the unit when analyst error is suspected or evident.
- Plan and supervise validation studies for laboratory sections.

**Additional Key Accountabilities:**

In addition to the key accountabilities listed for the Forensic Scientist Level III, incumbents at this level may have the decision-making authority to:

- Determine whether benchmarks for casework productivity are being met.
- Determine if investigative, analytical and chain of custody standards are being met.
- Determine if methods for evaluating evidence and conducting administrative and technical reviews are yielding satisfactory results and valid conclusions.
- Determine if projects, programs and procedures are meeting intended objectives and goals.
- Decide when sufficient evidence exists to advise supervisors that a quality control investigation is warranted.
- Determine the content of training presentations to be delivered to internal and external personnel relative to analytic, testing and sampling procedures.
- Decide how cases must be delegated and assigned to Forensic Scientists of a lower grade based upon the caseload, staffing strengths and other personnel considerations.

**Relationships with Others:**

In addition to the key contacts listed for Forensic Scientist Levels II-III, key contacts and relationships for Forensic Scientist Level IV incumbents include agency managers and supervisors and other clerical, technical and professional-level personnel; municipal, state and federal agencies; contractors and medical personnel; and the public.

**Working Environment:**

While performing the duties of this classification, incumbents may work in an office environment, laboratory setting and/or at on-site scenes. While working indoors within an office setting, the noise level in the work environment is usually quiet. While working at an on-site scene and/or within a laboratory setting, the noise level is usually moderate but may be noisy. While working at an on-site scene and/or laboratory setting, incumbents may be exposed to dangerous situations. Incumbents may be exposed to bloodborne pathogens, communicable diseases, decomposed bodies, bodily fluids or spills,

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contaminated products or syringes and needles. Incumbents may also be exposed to poisonous or hazardous chemicals, pollution or foreign substances including pathogenic material both known and unknown, toxic fumes and explosive and flammable substances. Incumbents work under stressful conditions and are subject to a high level of emotional and physical stress. Incumbents may be required to work under extreme weather and environmental conditions. Incumbents may be required to travel and may be exposed to traffic and other roadway or travel-related hazards. Incumbents may be required to work extended hours, shifts, nights, weekends and/or holidays.

**Physical Abilities:**

While performing the duties of this classification in a typical office environment, incumbents are regularly required to sit for long periods of time, handle materials and talk and/or hear. Incumbents are occasionally required to stand and walk. While working at an on-site scene and/or in a laboratory setting, incumbents are regularly required to stand and walk for long periods of time, bend, handle materials and tools or equipment, and reach with hands and/or arms. Incumbents are occasionally required to sit, climb, balance, stoop, kneel, crouch or crawl. Incumbents must occasionally lift, carry, push or pull up to 50 pounds with or without assistance and with or without the use of devices and/or equipment used to assist in the lifting effort. Incumbents must be able to make precise arm-hand movements, make precise finger movements, maintain hand-arm steadiness and move individual fingers independently. Work assignments may be performed with or without reasonable accommodation to a known disability.

**Knowledge, Education and Experience:**

Applicants must have a Bachelor's degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics and (A) at least four years of full-time, or equivalent part-time, professional experience as a bench chemist or forensic scientist in a crime laboratory or comparable setting, of which (B) at least two years must have been in a supervisory or managerial capacity and (C) full competence as a forensic analyst within an accredited laboratory within a relevant forensic science specialization, and documented experience in providing testimony as both an expert and material witness in legal proceedings or (D) any equivalent combination of the required experience and the substitutions below.

**Substitutions:**

- I. A Master's or higher degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics, may be substituted for a maximum of one year of the required (A) experience.

Incumbents are required to have a current and valid motor vehicle driver's license at a class level specific to assignment.

In addition to possessing the knowledge, skills and abilities required to Forensic Scientist Level III, **incumbents are required to have the following at the time of hire:**

1. Ability to collect and analyze data, develop standard operating protocols and maintenance protocols and design worksheets in order to integrate into existing systems and generate final reports and studies.
2. Ability to conduct internal audits according to established procedures.

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**V. FORENSIC SCIENTIST V:**

**Distinguishing Characteristics:**

This is the technical leader and/or section supervisor in this series. Incumbents perform complex work, often requiring the development of unique solutions, based on a deep technical knowledge of the specialty area. At this level, incumbents perform work that requires considerable independence in the exercise of judgment, in determining approaches and in the interpretation and application of policies, laws, standards and procedures. Incumbents assist in the development of new methods to meet specialized needs and may help to shape policy and provide technical guidance and advice to Forensic Scientists, based on the interpretation of agency policies, laws and procedures.

**Supervision Received:**

Incumbents receive general supervision from employees of a higher grade who provide direction on agency policy, work assignments and facilitate performance reviews through formal and informal verbal and written reports for effectiveness and conformance to laws, rules, regulations, policies and applicable laboratory protocols and accreditation standards.

**Supervision Exercised:**

Incumbents may exercise direct supervision over, assign work to and review the performance of Forensic Scientist Level IV and/or other employees of a lower grade.

Incumbents may exercise indirect supervision over Forensic Scientist Level II and III.

Incumbents may participate in the interviewing process and make recommendations for new hires.

**Additional Functions Performed:**

In addition to the functions performed at the Forensic Scientist Level I, II, III and IV, incumbents at this level may perform the following:

- Participate in the trial implementation phase of research and development activities to determine the feasibility of adopting new laboratory techniques, methods and procedures.
- Perform special laboratory studies such as process flow evaluations, root cause analyses and other diagnosis endeavors relative to supporting laboratory management and supervision efforts.
- Devise protocols, processes and procedures relative to forensic science innovations that are under consideration for implementation by management.
- Function as the technical leader and/or supervisor of laboratory units and sections and collaborate with laboratory management on quality assurance and accreditation oversight.

### **Additional Key Accountabilities:**

In addition to the key accountabilities listed for the Forensic Scientist Level I, II, III and IV, incumbents at this level may have the decision-making authority to:

- Determine through validation studies if a new instrument or technique is valid for use in casework.
- Determine the best procedures for new instruments and equipment.
- Decide the best methods for performing analysis on emergent criminal activity using available instruments and equipment.
- Determine how to implement recommendations or findings that result from an experimental or pilot project within the laboratory.
- Determine if a laboratory work group, unit or section is performing effectively and in keeping with the goals and objectives of the laboratory, as mandated through the quality assurance program.

### **Relationships with Others:**

In addition to the key contacts listed for the Forensic Scientist Level IV, key contacts and relationships for Forensic Scientist Level V incumbents include colleagues within the scientific community involved in forensic science research and compliance.

### **Working Environment:**

While performing the duties of this classification, incumbents may work in an office environment, laboratory setting and/or at on-site scenes. While working indoors within an office setting, the noise level in the work environment is usually quiet. While working at an on-site scene and/or within a laboratory setting, the noise level is usually moderate but may be noisy. While working at an on-site scene and/or laboratory setting, incumbents may be exposed to dangerous situations. Incumbents may be exposed to bloodborne pathogens, communicable diseases, decomposed bodies, bodily fluids or spills, contaminated products or syringes and needles. Incumbents may also be exposed to poisonous or hazardous chemicals, pollution or foreign substances including pathogenic material both known and unknown, toxic fumes and explosive and flammable substances. Incumbents work under stressful conditions and are subject to a high level of emotional and physical stress. Incumbents may be required to work under extreme weather and environmental conditions. Incumbents may be required to travel and may be exposed to traffic and other roadway or travel-related hazards. Incumbents may be required to work extended hours, shifts, nights, weekends and/or holidays.

### **Physical Abilities:**

While performing the duties of this classification in a typical office environment, incumbents are regularly required to sit for long periods of time, handle materials and talk and/or hear. Incumbents are occasionally required to stand and walk. While working at an on-site scene and/or in a laboratory setting, incumbents are regularly required to stand and walk for long periods of time, bend, handle materials and tools or equipment, and reach with hands and/or arms. Incumbents are occasionally required to sit, climb, balance, stoop, kneel, crouch or crawl. Incumbents must occasionally lift, carry, push or

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pull up to 50 pounds with or without assistance and with or without the use of devices and/or equipment used to assist in the lifting effort. Incumbents must be able to make precise arm-hand movements, make precise finger movements, maintain hand-arm steadiness and move individual fingers independently. Work assignments may be performed with or without reasonable accommodation to a known disability.

**Knowledge, Education and Experience:**

Applicants must have a Bachelor's degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics and (A) at least six years of full-time, or equivalent part-time, professional experience as a bench chemist or forensic scientist in a crime laboratory or comparable setting, of which (B) at least four years must have been in a supervisory or managerial capacity and (C) full competence as a forensic analyst within an accredited laboratory in a relevant forensic science specialization, and documented experience in providing testimony as both an expert and material witness in legal proceedings or (D) any equivalent combination of the required experience and the substitutions below.

**Substitutions:**

- I. A Master's degree in the natural sciences, including Chemistry, Analytical Chemistry, Biochemistry, Biology, Forensic Science, Pharmacology or Physics, may be substituted for a maximum of one year of the required (A) experience.

Incumbents are required to have a current and valid motor vehicle driver's license at a class level specific to assignment.

**Incumbents are required to have the following at the time of hire:**

1. Knowledge of the principles, practices and techniques of staff supervision and training.
2. Knowledge of the principles, practices and techniques of project management.
3. Knowledge of the principles, practices and techniques of research design.
4. Knowledge of the criminal justice and legal systems and criminal and civil codes, laws, rules and regulations of Massachusetts as they pertain to forensic science and analysis.
5. Knowledge of the proper chain of custody of criminal evidence.
6. Knowledge of manufacturer's standards and general recommendations for the calibration and maintenance of laboratory equipment, analytical devices and instruments and the methods used to troubleshoot sophisticated analytical equipment.
7. Knowledge of common sources and resources within the forensic science community of practice relative to maintaining awareness of contemporary developments and innovations in research, analysis, technology, theory, methodologies, processes, procedures and techniques.
8. Ability to collaborate with research specialists to design experiments according to established methods and protocols and to participate in grant and research proposal development.

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**Based on assignment, incumbents are required to have the following at the time of hire:**

1. Documented completion of education required for qualification to perform work in specific forensic analysis disciplines per the applicable accreditation standards.

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